

**Electric Distribution R&D Peer Review 2006
Project Summary**

YOUR ORGANIZATION:	American Electric Power
PROJECT TITLE:	Enhanced Distribution System Monitor
PRESENTERS:	Doug Fitchett
FY 2006 FUNDING:	\$ 90,000
FY 2007 FUNDING:	\$ 135,000
START/COMPLETION DATES:	March 2006/December 2007

Overall Project Purpose and Objectives: To create a cost effective robust communications network specifically designed for the power distribution system. A wireless mesh network utilizing unlicensed 900 MHz radios will be used to increase the visibility and add automated control capabilities to the power grid. This project will include the design of the network and preliminary proof of concept applications to be demonstrated on a small scale.

FY 2005 and FY 2006 Results and Accomplishments:

- Completed mesh network algorithms
- Completed networking simulations in software
- Built and tested prototype hardware
- Constructed 10 devices

FY 2007 Plans and Expectations: The 2007 plans will encompass the design and creation of the network management tools needed to administrate the mesh network; in addition to a larger deployment of mesh nodes and applications. As the scale of the network increases, additional testing and improvements will be made to the communications protocols and future hardware designs will be further optimized for reliability and cost.

The initial phase will test the capability of the “Mesh” for two applications, system voltage monitoring and outage notification. Additional applications will be developed to further test the capabilities of the “Mesh” in future years. These may include DSM, AMR, Asset Equipment Monitoring, Capacitor Controls and Distribution Automation among other undetermined applications.

Public/Private Partnerships: N/A